HOT MELT ADHESIVE

EVA Photovoltaic Encapsulation Film

UF-3300

UF-3300 is a transparent ethylene-vinyl acetate (EVA) encapsulant film engineered for solar module lamination. Supplied as smooth, tack-free rolls, it melts and crosslinks during vacuum lamination at 140–150 °C, bonding the glass, cells and backsheet into a single weatherproof laminate — supporting and fixing the cells, raising light transmission, and isolating moisture and other environmental attack for the 25-year service life of the module.

KEY FEATURES

- High light transmittance — ≥91% transmittance (380–1100 nm, after curing) maximises module conversion efficiency; UV-cut grade ≤30% at 280–380 nm on request
- Strong, durable adhesion — peel strength >60 N/cm to glass and >40 N/cm to backsheet, remaining >30 N/cm after DH1000 and UV ageing
- Reliable crosslinking — gel content ≥75% after standard lamination keeps the encapsulant stable through decades of thermal cycling
- Excellent weathering resistance — yellowing index ΔYI <5 after UV and damp-heat ageing; no delamination, bubbles or discolouration
- Low shrinkage, easy handling — MD ≤3.0% / TD ≤1.5% (120 °C, 3 min, before curing) for precise string layout and clean trimming
- Solid electrical insulation — volume resistivity ≥1.0 × 10^{15} Ω·cm and dielectric strength ≥25 kV/mm protect module performance under high humidity
- Made to your line — thickness 0.2–0.8 mm, width up to 1600 mm, roll lengths of 100–400 m to match your laminator

TECHNICAL SPECIFICATIONS

Property	Value
Main component	Ethylene-vinyl acetate copolymer (EVA, VA content 28–33%)
Appearance	Transparent film (clear type); white opaque type on request
Reference standard	GB/T 29848-2018 (PV module encapsulation EVA film)
Thickness	0.2-0.8 mm (standard 0.35 / 0.45 / 0.50 / 0.60 mm, tolerance ±0.03 mm)
Width	Up to 1600 mm, slitting on request
Roll length	100-400 m, customizable
Density	0.94-0.96 g/cm³
Light transmittance (cured)	≥91% (380-1100 nm); UV-cut grade ≤30% (280-380 nm)
Crosslinking degree (cured)	≥75%
Peel strength (cured)	To glass >60 N/cm; to backsheet >40 N/cm
Tensile strength / elongation	≥16 MPa / ≥450%
Shrinkage (before curing)	MD ≤3.0% / TD ≤1.5% (120 °C, 3 min)

Property	Value
Volume resistivity	≥1.0 × 10^{15} Ω·cm
Ageing performance	ΔYI <5 and peel >30 N/cm after UV 100 kWh/m2 and DH1000 (85 °C / 85% RH, 1000 h)
Storage	≤30 °C, ≤70% RH, sealed, away from direct sunlight; 6-12 months shelf life
Packaging	Moisture-barrier bags in cartons, palletised on request

RECOMMENDED PROCESSING CONDITIONS

Parameter	Value
Lamination temperature	140-150 °C (set by module structure and film thickness)
Vacuum	≤ -0.08 MPa before heating
Lamination time	12-18 min (full cycle including cure hold)
Notes	Optimise set point by crosslinking test on your laminator; use opened rolls within 24 h

TYPICAL APPLICATIONS

Crystalline silicon solar modules — front and rear encapsulation of mono- and poly-crystalline cell strings between glass and TPT/TPE/PET backsheet

Bifacial and double-glass modules — glass-to-glass encapsulation with stable electrical insulation under damp heat

Architectural laminated glass — safety and decorative laminated glass where high clarity and strong glass adhesion are required

Building-integrated PV (BIPV) — encapsulation for modules laminated into façades, roofing and canopy glass

PACKAGING AND STORAGE

- Supplied in standard export packaging; roll width, length and liner options confirmed on order.
- Store in a dry, ventilated place below 30 °C, away from direct sunlight, moisture and ignition sources.
- Shelf life: 12 months in unopened original packaging. Reseal opened rolls and use them within the period stated above.

> **Handling note:** Hot melt adhesives are applied molten. Use a suitable dispenser or laminator with accurate temperature control and keep hands clear of the melt and heated surfaces.

The values above are typical test results obtained under standard laboratory conditions and are provided for reference in product selection. They do not constitute a specification or warranty of performance in a particular application, because bonding results depend on substrate, equipment, line speed and ambient conditions. We recommend a trial run on your own production line before commercial use. Shanghai United Industry Co., Ltd reserves the right to revise this document without notice.

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